

ASSIGNMENT 2

Textbook Assignment: "Introduction to Welding," pages 3-1 through 3-35.

Learning Objective: Identify the general processes and material used in welding.

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| <p>2-1. The source of heat for the forge welding process is a flow of electricity between two contacts.</p> <ol style="list-style-type: none">1. True2. False <p>2-2. In welding terms, RSW means</p> <ol style="list-style-type: none">1. round sheet welding2. resident shop welds3. resistance spot welding4. resistant spot welds <p>2-3. The source of heat for electric-arc welding is</p> <ol style="list-style-type: none">1. a flow of electricity between two contacts2. the resistance of a metal to the flow of an electric current3. the bombardment of a metal with electrons4. a furnace <p>2-4. The primary advantage of using shielded metal-arc welding is that it produces high-quality welds rapidly at a low cost.</p> <ol style="list-style-type: none">1. True2. False <p>2-5. Which of the following factors are unique to shielded metal-arc welding and are NOT connected at all to gas shielded-arc welding?</p> <ol style="list-style-type: none">1. Use of a transformer2. Use of a rectifier3. Production of a shield of inert gas4. Each of the above <hr/> <p>Learning Objective: Identify correct welding terminology</p> <hr/> | <p>2-7. The two types of filler metals commonly used in welding are welding rods and welding electrodes.</p> <ol style="list-style-type: none">1. True2. False <p>2-8. A common property of a welding rod and a welding electrode is that both are used to conduct electricity.</p> <ol style="list-style-type: none">1. True2. False <p>2-9. When electrodes are divided into groups, they are classified into what categories?</p> <ol style="list-style-type: none">1. Consumable or nonconsumable2. Conductive or nonconductive3. Electric-arc or gas4. Metallic or nonmetallic <p>2-10. The materials used to dissolve or facilitate the removal of oxides and other undesirable substances formed during welding are known by what term?</p> <ol style="list-style-type: none">1. Alloys2. Peroxides3. Fluxes4. Distillates <p>2-11. A good flux does NOT have to</p> <ol style="list-style-type: none">1. remove oxides from joint surfaces2. be active at the melting point of the filler metal3. mix well with the base metal alloys in order to lower the base metal melting temperature4. be easily removed after the joint is welded <p>2-12. Fluxes are produced in which of the following forms?</p> <ol style="list-style-type: none">1. Paste2. Powder3. Liquid4. All of the above |
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- 2-6. When welding two pieces of metal together, you will often need to leave a space to be filled in. What material is added during the welding phase?
1. Filler metal
 2. Electrodes
 3. Flux
 4. Fusion gas

2-13. What are the five fundamental types of joints?

1. Fillet, groove, bead, stringer, and tack
2. Lap, flanged, tee, butt, and edge
3. Lap, flanged, tee, butt, and bead
4. Lap, flanged, tee, butt, and stringer

2-14. When two members are at right angles to each other, you should use what type(s) of welded joint?

1. Lap only
2. Edge only
3. Tee or corner
4. Butt or edge

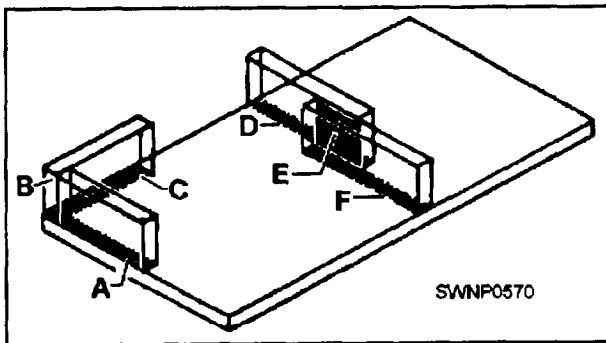


Figure 2A

IN ANSWERING QUESTIONS 2-15 THROUGH 2-17, REFER TO FIGURE 2A.

2-15. A corner joint is indicated at what location(s)?

1. B only
2. A and C only
3. A, B, and C only
4. A, B, C, and E

2-16. A tee joint is located at what location(s)?

1. B
2. A and C
3. E
4. D and F

2-17. What type of joint is E?

1. Butt
2. Lap
3. Edge
4. Tee

2-18. When the edge of each of two joints that are to be joined are beveled to an angle of 45 degrees, how large is the groove angle?

1. 30 degrees
2. 45 degrees
3. 60 degrees
4. 90 degrees

2-19. To determine the bevel angle, groove angle, and root opening for a weld joint, you must consider which of the following factors?

1. The type of weld joint and electrode composition
2. The kind of joint, the welding process, and the thickness of the base metal or material to be welded
3. The amount of weld joint penetrator required to produce a sound weld
4. The thickness of the base metal and the diameter of the electrode to be used

2-20. The depth that a groove weld extends into the root of a joint is known by what term?

1. Reinforcement factor
2. Joint penetration
3. Root opening
4. Root penetration

2-21. What type of weld bead is made by using a side-to-side oscillation?

1. Stringer
2. Filler
3. Weave
4. Buildup

2-22. The term "buildup sequence" refers to what factor in the welding process?

1. The frequency of oscillation required to fill in a groove
2. The order in which the beads of a multipass weld are deposited
3. The number of filler layers required
4. The thickness of the metal that is to be welded

2-23. What type of weld has a triangular cross section?

1. Single surface
2. Plug
3. Root
4. Fillet

- 2-24. What type of weld has a circular cross section made by applying filler metal through a prepunched or precut hole?
1. Single surface
 2. Plug
 3. spot
 4. Fillet
- 2-25. What type of weld is used to apply a hard wear resistant layer of metal to surfaces or edges of worn-out parts?
1. Surfacing
 2. Plug
 3. spot
 4. Fillet
- 2-26. To provide for the final weld, you should use what type of weld temporarily to hold two parts in proper alignment?
1. Fillet
 2. Tack
 3. Plug
 4. slot
- 2-27. The junction between the face of the weld and the base is known as the
1. face
 2. root
 3. toe
 4. leg
- 2-28. The exposed surface on the side from which the weld was made is known as the
1. face
 2. root
 3. toe
 4. leg
- 2-29. The portion of the weld from the toe to the root is known as the
1. face
 2. root
 3. toe
 4. leg
- 2-30. Why is the term "heat-affected zone" important to a welder?
1. It is the zone only where melting (fusion) occurs
 2. It is the zone that includes a portion of the base metal that has not been melted. The structural and mechanical properties have been altered by weld heat
 3. The amount of heat applied after weld completion to return it to its original condition
 4. The type of heating gases produced during welding
- 2-31. What term do you use to describe the details of a joint that includes both geometry and required dimensions?
1. Joint efficiency
 2. Joint design
 3. Joint shape
 4. Joint description
- 2-32. What butt joint is NOT recommended when metals are subject to fatigue or impact loads?
1. Single-V butt joint
 2. Double-V butt joint
 3. Square butt joint
 4. Single-bevel butt joint
- 2-33. What joint is recommended as an excellent joint for all load conditions?
1. Single V
 2. Double V
 3. Square
 4. Single bevel
- 2-34. What corner joint is used primarily for welding 12 gauge or lighter sheet metal?
1. Full open
 2. Flush
 3. Half open
 4. Double fillet lap
- 2-35. What tee joint is used in locations where heavy loads are applied?
1. Single bevel
 2. Double bevel
 3. Square
 4. Full open

- 2-36. The strength of a single-fillet lap joint is determined by what factor?
1. The depth of weld penetration
 2. The strength of the base metals
 3. The size of the fillet
 4. The filler metal

Learning Objective: Identify the welding positions used when making welds.

- 2-37. All welding is done in four positions.
1. True
 2. False
- 2-38. The American Welding Society (AWS) number/letter designation 1F indicates
1. a vertical weave bead
 2. a horizontal stringer bead
 3. a fillet weld in the overhead position
 4. a fillet weld in a flat position
- 2-39. Because of the effect of gravity on welding, what is the welding position a welder should use any time conditions allow?
1. Flat
 2. Vertical
 3. Horizontal
 4. Overhead
- 2-40. In pipe welding there are four basic-test positions used that refer to the position of the pipe and not to the position of the welding.
1. True
 2. False
- 2-41. When welding a pipe in the 6G position for pipe welding, you use what welding position(s)?
1. Horizontal only
 2. Vertical only
 3. Overhead and vertical
 4. All positions

Learning Objective: Identify the effects of expansion and contraction upon welds.

- 2-42. When two pieces of metal are welded together, what factor causes internal stresses, distortion, and warpage?
1. The difference in temperature from the actual joint of the weld out to the edges of the joint
 2. The structural weakness of the metal
 3. An incorrect flame adjustment
 4. A high concentration of heat in one area
- 2-43. When exposed to the heat buildup of welding, all metals expand in the path of least resistance.
1. True
 2. False
- 2-44. To aid in controlling distortion, you should space tack welds at least 12 inches apart and run approximately how long?
1. The thickness of the metal
 2. Twice the thickness of the metal
 3. The thickness of the weld
 4. Twice the thickness of the weld
- 2-45. Why is an intermittent weld (often referred as a skip weld) used?
1. To control heat input
 2. To ensure spacing between the metals being welded
 3. To allow you to check weld penetration
 4. Job requirement
- 2-46. To control the forces of expansion and contraction during welding operations, you heat the entire structure after welding.
1. True
 2. False
- 2-47. What devices should use to prevent excessive movement of metal parts during a welding operation, you should use what devices?
1. Clamps and tape
 2. Tape and glue
 3. Fixtures and springs
 4. Welding clamps and jigs

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- Learning Objective: Identify the factors involved with determining welding procedures and reading and interpreting welding drawing and specifications.
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- 2-48. Which of the following variables must be considered when identifying the correct welding procedure?
1. Type of base metal
 2. Testing requirement
 3. Joint design
 4. All of the above
- 2-49. When assigned a welding job, you should make a thorough examination of the drawings and specifications. In what section of the specifications do you look for welding codes ?
1. Section 5
 2. Section 2
 3. Section 3
 4. Section 4
- 2-50. What type of line is used to show the edges of an object that are visible to a viewer?
1. Hidden
 2. Visible
 3. Viewing plane
 4. Section
- 2-51. What type of line is used on a drawing to show the edges of concealed studs, pipes, and electrical conduit?
1. Hidden
 2. Visible
 3. Viewing plane
 4. Section
- 2-52. What type of line is used on a drawing to show different types of materials?
1. Hidden
 2. Visible
 3. Viewing plane
 4. Section
- 2-53. Which of the following drawings is used to show internal components?
1. Cutting plane
 2. Hidden
 3. Section
 4. Internal
- 2-54. A general note is used to provide additional information that applies to one particular part or feature of a drawing.
1. True
 2. False
- 2-55. The dimensions of an object should be measured (scaled) directly from the drawing.
1. True
 2. False
- 2-56. What do you call a drawing that shows how an object will appear after being manufactured?
1. Orthographic
 2. Pictorial
 3. Sectional
 4. Dimensional
- 2-57. What type of drawing is used to show a complex object completely?
1. Orthographic
 2. Pictorial
 3. Sectional
 4. Dimensional
- 2-58. The standard welding symbols of the American Welding Society) AWS consist of which of the following features?
1. A reference line
 2. An arrow
 3. A tail
 4. All of the above
- 2-59. The term "welding symbol" refers to the total symbol which includes all the information needed to specify the weld(s) required.
1. True
 2. False
- 2-60. What type of symbols is used with weld symbols to show how the face of the weld is to be formed?
1. Finish
 2. Contour
 3. Completion
 4. Detail
- 2-61. What type of symbols is used to indicate the method to use for forming the contour of the weld?
1. Finish
 2. Contour
 3. Completion
 4. Detail

Learning Objective: Identify characteristics and functions of safety equipment worn by welders.

- 2-62. What eye protection device is designed to be worn under the welder's helmet?
1. Eyecup or cover goggles
 2. Flash goggles with side shields
 3. Dark lens plastic full-face shield
 4. Commercial sunglasses
- 2-63. Which one of the following reasons is a welding helmet worn?
1. To provide eye protection
 2. To shield against flying metal
 3. To protect against ultraviolet rays
 4. All of the above
- 2-64. When you are welding with a current of 300 amperes, what lens filter is best for eye protection?
1. No. 06
 2. No. 08
 3. No. 10
 4. No. 12
- 2-65. When using a light bulb to test a filter lens, you can determine whether the lens is of the proper shade by which of the following indications?
1. You can see a distinct outline of the bulb
 2. The light from the bulb becomes a sharp point of light
 3. You can no longer see the outline of the bulb
 4. The light becomes blue and scattered
- 2-66. What type of leather gauntlets are recommended for arc welding?
1. Five finger
 2. Two finger
 3. Three finger
 4. Four finger
- 2-67. What items of safety gear are best suited for overhead welding?
1. Cape and sleeves
 2. Apron and overalls
 3. Jacket and leggings
 4. Bib and leggings
- 2-68. Which of the following clothing materials is least likely to catch fire from welding sparks?
1. Oilskin
 2. Wool
 3. Plastic
 4. Cotton